UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,493	12/05/2005	Marco Bosch	12810-00175-US	8701

23416 7590 08/01/2008

CONNOLLY BOVE LODGE & HUTZ, LLP
P O BOX 2207
WILMINGTON, DE 19899

EXAMINER	
KEMMERLE III, RUSSELL J	

ART UNIT	PAPER NUMBER
1791	

MAIL DATE	DELIVERY MODE
08/01/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/559,493	BOSCH ET AL.	
	Examiner	Art Unit	
	RUSSELL J. KEMMERLE III	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-17,19,20 and 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-17,19,20 and 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 10 June 2008 and 10 July 2008 have been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6, 8-17, 19, 20 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 as currently amended recites a SiO_2/Al_2O_3 molar ratio of "greater than 10:1 to 1200:1". It is unclear if the molar ratio is supposed to fall within the range recited, if it is to be greater than 10:1 or if it is to be greater than 1200:1.

Claims 2-6, 8-17, 19, 20 and 22 are rejected based on their dependence from claim 1.

For the purpose of this Office action it was assumed that the limitation was intended to limit the molar range to within the range of 10:1 to 1200:1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6, 8-17, 19, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frauenkron (US Patent 6,562,971) in view of Ogawa (US Patent 6,350,874).

Frauenkron discloses a method of forming a body which involves mixing a zeolite powder with silica (which acts as a binder), extruding the mixture, and calcining the formed body at 500°C for 5 hours (Col 14 line 65 – Col 15 line 6). While the example used in that passage is a zeolite powder of silica and titania, Frauenkron also discloses that the powder could be a mixture of silica and alumina (see Claim 1, Col 15 lines 55-56). The shaped body is further treated by exposure to a gas including water vapor at a temperature of 345°C (Col 15 lines 10-22). This process is disclosed as being carried out continuously (Claim 2), which would include for longer than 20, or even 50, hours, and at an absolute pressure of 0.1-10 bar (Claim 14).

Frauekron does not disclose that the aluminosilicate used have an SiO_2/Al_2O_3 molar ratio of 10:1 to 1200:1, but instead discloses a molar ratio of greater than 1400:1 (Col 4 lines 6-9).

Ogawa discloses an aluminosilicate catalyst to be used in forming preparation of triethylenediamine according to a process similar to that of Frauenkron. Ogawa further discloses that the crystalline aluminosilicate have a molar ratio of silica to alumina of at least 12:1, and preferably from 40:1 to 5000:1. This would have been obvious because Ogawa discloses that a catalyst with such a molar ratio is economical, has a long life and the yield can be kept high (Col 4 lines 15-18).

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant, to have modified the method taught by Frauenkron by using the aluminosilicate catalyst of Ogawa having a molar ratio of greater than 12:1

Referring to claims 3 and 4, the treatment is carried out at a WHSV of 1 kg/(kg*h) (1 g/(g*h)) (Col 15 lines 18-19).

Referring to claim 6, Frauenkron discloses that the during the water vapor treatment the body is arranged in a fixed bed (Col 7 lines 13-14)

Referring to claims 9 and 10, Frauenkron discloses that the zeolite material is preferably of the pentasil type, and preferably at least partially in the H^+ and/or NH_4^+ form (Col 9 Line 66 – Col 10 line 11).

Referring to claims 11 and 13, Frauenkron discloses a method of making triethylenediamine (TEDA) by a reaction involving ethlenediamine (EDA) and piperazine (PIP) in the presence of the aluminosilicate zeolite catalyst discussed above (Claim 1)

Referring to claim 12, Frauenkron discloses that this process is carried out continuously and in the gas phase (Claims 2 and 3)

Referring to claims 14, 15, 16 and 17, these limitations are all disclosed by Frauenkron (Claims 9, 10, 13 and 14, respectively)

Referring to claims 19 and 20, the chemical synthesis process discussed above for making TEDA renders these claims anticipated.

Referring to claim 22, since Frauenkron discloses the method of claim 1 as discussed above, it would also anticipate the shaped body prepared by that method.

Double Patenting

The previous double patenting rejections are withdrawn.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

In as much as Applicant's arguments may be applied to the current rejection, specifically with respect to the argument that Frauenkron teaches away from the claimed molar ratio, this is not found to be persuasive.

There is nothing in Frauenkron that criticizes, discredits, or otherwise discourages the use of an aluminosilicate catalyst having a molar ratio of less than 1400:1. The fact that they used only catalysts having a molar ratio of greater than 1400:1 is not the same as teaching away from using a catalyst with the claimed molar ratio.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RUSSELL J. KEMMERLE III whose telephone number is (571)272-6509. The examiner can normally be reached on Monday through Thursday, 7:00-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven P. Griffin/
Supervisory Patent Examiner, Art Unit 1791

/R. J. K./
Examiner, Art Unit 1791